SOLUTION DEMONSTRATION LAB FACILITY PLAN

Department of Transportation

DELPHI Program

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Introduction

Purpose

The purpose of this Solution Demonstration Lab (SDL) Facility Plan is to define the approach for developing and implementing the technical environment used in executing the SDL processes and for DELPHI training.

Scope

The SDL Facility Plan describes technical requirements and addresses major architectural issues associated with establishing the DELPHI Interim SDL environment, the Stage-2 SDL environment and the training environment. The following topics are covered in this plan:

- Considerations and Assumptions
- Technical Requirements (including software, hardware and peripheral equipment)
- Technical Design
- Technology Standards
- Implementation Approach / Strategy

The responsibility for executing the SDL Facility Plan resides with the DELPHI Technical Infrastructure Group in close coordination with the DOT Program Management Team.

Related Documents

1. Program Charter for the DELPHI Program
2. Technical Infrastructure Strategy for the DELPHI Program

Considerations and Assumptions

Considerations

- To accommodate the execution of the DELPHI SDL processes, the SDL Facility Plan requires two deployment phases. Phase I consists of establishing an interim environment until production-class computers are acquired. This environment will support Oracle Federal Financials Version 1.1 for Release 10.7, Smart Client (Client/Server). The number of users with access to the system during this period of time is 50-150 persons (50 simultaneous).
- Phase II of the SDL Facility Plan establishes an environment for the "Stage-2" SDL processes beginning in August, 1998. The "Stage-2" environment will support Oracle Federal Financials Version 2.0 for Release 11, Web-enabled (NCA). This environment will use machines intended for production deployment (i.e. DEC Alpha 8400). The number of users with access to the system during this period of time is 50-150 persons (50 simultaneous).

Assumptions

Content and context within the SDL Facility Plan are based on the following assumptions:

- The facilities and equipment will be available and acquirable within existing project time tables.
- Oracle Federal Financials Version 2.0 for Release 11 is scheduled for release July 1998. Information on the product and system requirements is limited until that time. System requirement specifications within this document are based on systems of similar design and will be adjusted as more definitive information is obtained from the vendor.
- Oracle consultants have their own laptops with Oracle's client application installed and have network accessibility to the Delphi server(s).
- Each full-time DOT team member has an individually designated office space and a SDL-compatible workstation (refer to "Hardware Requirements" section) that is network attached and linked to the DELPHI server(s).

Technical Requirements

There are three key areas of technical requirements within the SDL Facility: hardware, software, and peripheral equipment. These requirements are based on systems of similar design and are subject to change depending on the final system requirements specifications released by Oracle.

Hardware Requirements

An efficiently operating SDL Facility requires defined computing hardware components. These integrated components constitute the primary physical element of the environment. The required hardware is:

- Workstations:
  - ✓ (16) Pentium 133Mhz workstations; each with 32MB RAM and 1GB disk storage (4 workstations per SDL room)
  - ✓ 10Base-T Ethernet card per workstation (Preferred: 10/100Base-T card)
- Servers for Interim Environment:
  - ✓ (2) DEC Alpha 2100 computers with combined 1-2GB RAM and 50GB of available disk storage
- Server for Stage-2 Environment:
  - ✓ (1) DEC Alpha 8400 computer with 2 CPU's, 2GB RAM and 50GB disk storage

    *This is the minimum specification. The expected initial configuration of the server is 4 CPU's, 4GB RAM and 350GB disk storage
- Networking:
  - ✓ 10Base-T Ethernet supporting TCP/IP (Preferred: 10/100Base-T with 10/100Mbps *switch hubs*)
  - ✓ (7) network ports (RJ45) per SDL room

Software Requirements

The required software products and tools for the SDL Facility are:

- Workstations:
  - ✓ Windows 95 or Windows NT
  - ✓ Internet Explorer 3.0 (or later release) or Netscape Navigator 3.0 (or later release)
  - ✓ Oracle AppletViewer
  - ✓ Microsoft Office
- Servers for Interim Environment:
  - ✓ Oracle Federal Financials Version 1.1 for Release 10.7, Smart Client (Client/Server)
  - ✓ Digital UNIX Operating System
- Server for Stage-2 Environment:

- ✓ Oracle Federal Financials Version 2.0 for Release 11, Web-enabled (NCA)
- ✓ Digital UNIX Operating System
- ✓ Oracle Web Server; Perl CGI Script manager (optional)

- Networking:
  - ✓ TCP/IP stack (if applicable)

Peripheral Equipment Requirements

In addition to base computing hardware, the SDL Facility requires indirect hardware components. These components are the secondary physical element of the SDL Facility:

- Network attached laser printers; one per SDL room
- Analog modem lines; one per SDL room (with multiple connection points within the room)

Other Requirements

The following are additional requirements not defined in the above sections:

- Database Instances:
  1. SDL-1
  2. Development
  3. Training
  4. Database Tuning and Testing
  5. System Testing
  6. SDL-2 (NCA) *only on Stage-2 system
- Four SDL rooms, each with seating capacity and work areas for 12+ people
- Electrical outlets to support 4+ desktop and 4+ laptop computers per SDL room
- Two speakerphones (with separate lines) per SDL room
- File cabinet(s) in each SDL room
- Whiteboard and flip chart(s) in the SDL rooms
- Shared copier and fax machine
- Ready access to 4 overhead projectors and projection screens
- Ready access to 1-2 computer projection units
- Bound printed Oracle Documentation and Technical Reference Manuals
- Office supplies (transparent tape, masking tape, dry-erase whiteboard markers, stapler, staples, staple remover, 3-hole punch, 3-ring binders, pens, pencils, writing tablets, file folders, post-it notepads, binder clips, paper clips, thumb tacks, 3.5” formatted diskettes, transparency sheets, markers)

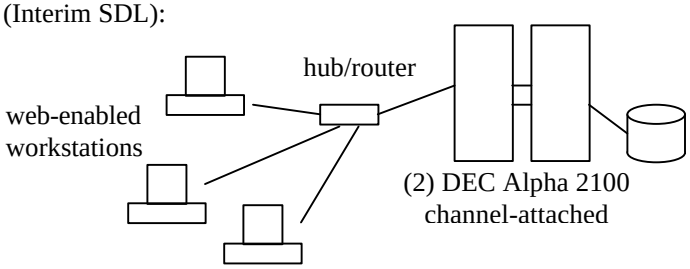
Technical Design

The Technical Design defines the relationship between defined system components and provides an architectural blueprint for the SDL Facility. Two levels of design are provided in this document. They are the Logical Design and the Physical Design.

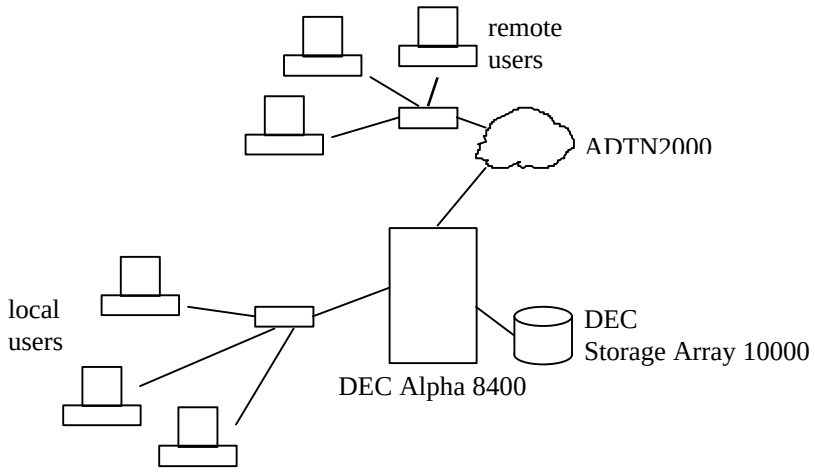
Logical Design

The following Logical Design of the SDL Facility depicts how system components will fit together from a logical standpoint.

Phase I (Interim SDL):



Phase II (Stage-2 SDL):



Physical Design

The Physical Design of the SDL Facility defines how system components are physically placed and connected.

For space planning and configuration, refer to DELPHI blueprints per Space Management group.

Technology Standards

Standards

The following telecommunication standards will be used as a foundation for developing and implementing the SDL Facility:

- TCP/IP as network communications protocol
- Web browsers must support HTML release 4.0 with Java Script enabled

Implementation Approach / Strategy

This section describes the general manner in which the SDL Facility will be assembled and deployed. Included are the unique characteristics associated with the implementation of this facility.

Implementation Approach

The SDL Facility has two phases of implementation, one environment for each equipment platform (i.e. DEC Alpha 2100 for Interim SDL; DEC Alpha 8400 for Stage-2 SDL). Although the phases are distinct, they start simultaneously and run a near-parallel course. From a timing perspective, the Interim SDL environment will be completed first and begin the initial SDL processes. The Stage-2 SDL environment will be established to support Oracle Federal Financials Version 2.0 for Release 11 soon after the expected software release date of July 1998 and will complete the remainder of the SDL process.

Server equipment associated with the Stage-2 SDL environment will replace server equipment associated with the Interim SDL environment. Lab rooms, workstations, and all peripheral equipment associated with the SDL Facility will serve both SDL environments/phases.